IN THE CLAIMS:

The claims have been amended as follows:

1. (Currently Amended) A method for transmitting signaling system seven (SS7) user part messages between SS7 signaling points comprising:

   (a) receiving, at a first signal transfer point (STP), a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link;

   (b) at the first signal transfer point, encapsulating the first SS7 user part message in a first internet protocol (IP) packet; and

   (c) from the first signal transfer point, transmitting the first IP packet to a second SS7 signaling point over an IP network.

2. (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a transmission control protocol (TCP) header to the first SS7 user part message.

3. (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a user datagram protocol (UDP) header to the first SS7 user part message.

4. (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding an application-level sequence number to the first SS7 user part message.

5. (Original) The method of claim 1 wherein transmitting the first IP packet to a second SS7 signaling point includes transmitting the first IP packet without terminating user part layer communications.

6. (Original) The method of claim 1 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a local service switching point (SSP), and the IP network thereby functions as an SS7 A link between the first STP and the SSP.

7. (Original) The method of claim 1 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP of the same hierarchical level as the first STP, and

the IP network thereby replaces an SS7 B link between the first and second STPs.

8. (Original) The method of claim 1 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP, the first and second STPs comprising a mated pair of STPs, and the IP network thereby functions as an SS7 C link between the first and second STPs.

9. (Original) The method of claim 1 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP of a different hierarchical level than the first STP, and the IP network thereby functions as an SS7 D link between the first and second STPs.

10. (Original) The method of claim 1 transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a service switching point (SSP) located in a different local area from the first STP, and the IP network thereby functions as an SS7 E link between the first STP and the SSP.

11-47. (Withdrawn)

48. (Currently Amended) A signaling system seven/internet protocol (SS7/IP) user part message communicator comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:

(a) receiving, at a first signal transfer point (STP), a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link;

(b) at the first signal transfer point, encapsulating the first SS7 user part message in a first IP packet; and

(c) from the first signal transfer point, transmitting the first IP packet to a second SS7 signaling point over an IP network.

49. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes

adding a transmission control protocol (TCP) header to the first SS7 user part message.

50. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a user datagram protocol (UDP) header to the first SS7 user part message.

51. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes adding an application-level sequence number to the first SS7 user part message.

52. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point includes transmitting the first IP packet without terminating user part layer communications.

53. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a service switching point (SSP), and the IP network thereby functions as an SS7 A link between the first STP and the SSP.

54. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP of the same hierarchical level as the first STP, and the IP network thereby replaces an SS7 B link between the first and second STPs.

55. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP, the first and second STPs comprising a mated pair of STPs, and the IP network thereby functions as an SS7 C link between the first and second STPs.

56. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a second STP of a different hierarchical level than the first STP, and the IP network thereby functions as an SS7 D link between the first and second STPs.

57. (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point over an IP network comprises transmitting the IP packet to a service switching point (SSP) located in a different local area from the first STP, and the IP network thereby functions as an SS7 E link between the first STP and SSP.

58-78. (Withdrawn)

79. (New) The method of claim 1 wherein the first SS7 user part message comprises an ISDN user part message.

80. (New) The method of claim 1 wherein receiving a first SS7 user part message includes intercepting a first SS7 user part message addressed to an SS7 point code of the second SS7 signaling point, wherein encapsulating the first SS7 user part message in a first IP packet includes inserting a destination IP address corresponding to the second SS7 signaling point in the IP packet, and wherein the second SS7 signaling point comprises a destination end office for a call associated with the first SS7 user part message.

81. (New) The SS7/IP user part message communicator of claim 48 wherein the first SS7 user part message comprises an ISDN user part message.

82. (New) The SS7/IP user part message communicator of claim 48 wherein receiving a first SS7 user part message includes intercepting a first SS7 user part message addressed to an SS7 point code of the second SS7 signaling point, wherein encapsulating the first SS7 user part message in a first IP packet includes inserting a destination IP address corresponding to the second SS7 signaling point in the IP packet, and wherein the second SS7 signaling point comprises a destination end office for a call associated with the first SS7 user part message.